

Office of Chief Counsel  
Internal Revenue Service  
**Memorandum**

**Release Number: 20080401F**

Release Date: 1/25/08

CC:LM:HMT:DET:GEGABRIEL  
POSTF-131622-07

UILC: 472.08-00

date: December 21, 2007

to:  
Inventory Technical Advisor

from:  
Associate Area Counsel (LMSB)

---

subject: Petroleum Refiner Item Definition for Dollar-value LIFO (Section 472)

This Field Attorney Advice responds to your request for assistance. This advice may not be used or cited as precedent.

**LEGEND**

|                    |   |  |
|--------------------|---|--|
| <u>Taxpayer</u>    | = |  |
| <u>Sub 1</u>       | = |  |
| <u>Sub 2</u>       | = |  |
| <u>Sub 3</u>       | = |  |
| <u>#</u>           | = |  |
| <u>year a</u>      | = |  |
| <u>Partnership</u> | = |  |

**ISSUE:**

Has Taxpayer defined its dollar-value LIFO inventory "items" too broadly to clearly reflect income?

**CONCLUSION:**

Yes.

**FACTS:**

Sub 1, Sub 2 and Sub 3 are all wholly-owned subsidiaries of Taxpayer that files a consolidated income tax return based on the overall accrual method of accounting. Taxpayer is engaged in the purchase of crude oil and other feedstocks, the refining of such crude oil and other feedstocks in refined products and marketing such refined products to customers. During taxable years prior to year a, Sub 1, Sub 2, and Partnership maintained their own inventory of crude oil and refined products as separate entities. Following a series of IRC § 351 transfers in taxable year a<sup>1</sup> from Sub 1, and Sub 2, (and other entities), all of Taxpayer's inventories were maintained in Sub 3. Taxpayer is the #.

Taxpayer (through Sub 3) purchases a wide array of crude oils including sour crude oils, intermediates and resid, which can typically be purchased at a discount to West Texas Intermediate, a benchmark crude oil.

About two-thirds of Taxpayer's crude oil requirements are purchased (by Sub 3) through long-term contracts. The remainder of Taxpayer's crude oil requirements are generally purchased on the spot market. Taxpayer's term supply agreements include arrangements to purchase crude oils directly or indirectly from various foreign national oil companies (including feedstocks originating in \_\_\_\_\_ and domestic integrated oil companies at market-related prices.

Taxpayer's U.S. network of crude oil pipelines and terminals allows Taxpayer to acquire crude oil from producing leases, domestic crude oil trading centers and ships delivering cargoes of foreign and domestic crude oil. The network also allows Taxpayer to transport crude oil supplies to many of its U.S. refineries at a competitive cost (compared to facilities that lack proprietary supply networks).

Due to the location of Taxpayer's refineries and their refining capabilities, Taxpayer has to purchase several types of crude oil from both domestic and foreign sources. Taxpayer's bulk gasoline and distillate sales are made to various oil companies and gasoline distributors and are

---

<sup>1</sup> For purposes of the Field Attorney Advice we are only addressing Taxpayer's post I.R.C. § 351 transfer item definition

transported by pipeline, barges and tankers. The principal purchasers of Taxpayer's transportation fuels from terminal truck racks are wholesalers, distributors, retailers and end users (such as railroads, airlines and utilities) throughout the United States. Most of Taxpayer's refineries have access to deep-water transportation facilities, and all interconnect with common-carrier pipeline systems, allowing Taxpayer to sell products in most major geographic regions of the

Taxpayer also enters into refined product exchange and purchase agreements. These agreements enable Taxpayer to minimize transportation costs, optimize refinery utilization, balance refined product availability, broaden geographic distribution and sell to markets not connected to Taxpayer's refined product pipeline system. Exchange agreements provide for the delivery of refined products to unaffiliated companies at Taxpayer's and third parties' terminals in exchange for delivery of a similar amount of refined products to Taxpayer by these unaffiliated companies at specified locations. Purchase agreements involve Taxpayer's purchase of refined products from third parties with delivery occurring at specified locations. Although most of these agreements are long-standing, they generally can be terminated with 30 to 90 days notice.

Taxpayer also sells a variety of other products produced at its refineries including asphalt, lube base oils and commodity petrochemicals. These products are transported via pipelines, barges, trucks and railcars. Taxpayer produces and markets a large volume of asphalt to customers in the paving and roofing industries.

### **Taxpayer's Dollar-Value LIFO Item Definition**

Taxpayer maintains two LIFO pools – one for crude oil and other feedstocks and one for refined products.

#### ***Crude Oil and Other Feedstocks***

For purposes of computing its price index for crude oil and other feedstocks under the double-extension method, Taxpayer maintains three items of inventory. These items consist of (1) feedstock crude oil; (2) feedstock intermediates; and (3) feedstock light. According to Taxpayer's books and records its defined item of "feedstock crude" consists of approximately 65 different stock-keeping units (SKUs). Taxpayer maintained approximately 70 SKUs for its defined item "feedstock intermediates" and approximately 5 SKUs for feedstock lights as set forth in Table A below.

| <b>Table A – Number of SKUs within Taxpayer's Three Items in the Crude Oil and other Feedstocks Pool</b> |  |
|--|--|
| Taxpayer's "item"  | Approximate # of SKUs within Taxpayer's "item" Year <u>a</u> |
| Feedstock Intermediates  | 70   |
| Feedstock Light  | 5  |

|                 |    |
|-----------------|----|
| Feedstock Crude | 65 |
|-----------------|----|

Taxpayer's defined item of feedstock crude is the major category of feedstocks in Taxpayer's inventory.

The price ranges of the SKU's comprising Taxpayer's defined item of feedstock crude inventory is set forth in Table B immediately, below.

| <b>Table B – Analysis Taxpayer's Defined "Item" of Feedstock Crude Inventory</b> |       |  |         |  |         |
|--|-------|--|---------|--|---------|
| Year   | Items | Range of Price on Crude Ending Inventory |         | Range for over 40% of Crude Ending Inventory |         |
|  |       | Lowest                                   | Highest | Lowest                                       | Highest |
| <u>a</u>   | 65    | 11.40                                    | 34.71   | 22.56  | 27.82   |
| <u>a</u> + 1   | 74    | 25.00                                    | 34.71   | 26.12  | 30.87   |

Taxpayer described changes in its feedstock inventory from year a-3 through year a as set forth in Table C (below).

| <b>Table C – Changes in Feedstock Composition for year <u>a</u> -3 through year <u>a</u></b> |             |         |
|--|-------------|---------|
|  | Year        | Details |
|  | <u>y</u> -3 |         |
|  | <u>y</u> -2 |         |
|  | <u>y</u> -1 |         |
|  | <u>y</u>    |         |

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

### ***Refined Products Pool***

Taxpayer maintained twelve “items” in its refined product pool. These items were comprised of SKUs ranging from approximately 4 (in the case of by product) to approximately 108 (in the case of gasoline) as depicted in Table D, below.

| <b>Table D – Taxpayer’s Twelve “items” in the Product Pool</b> |   |
|--|---|
| Taxpayer’s “item”  | Approximate # stock-keeping units contained within the item |
| Asphalt  | 24  |
| By Product   | 4   |
| Distillate   | 24  |
| Distillate Blendstock  | 6   |
| Gasoline   | 108   |
| Gasoline Blendstock  | 20  |
| Heavy Products   | 15  |
| Lube   | 32  |
| Naphtha  | 7   |
| NGL  | 22  |
| Oxygenate  | 6   |
| Petrochemical  | 11  |

An analysis of Taxpayer’s SKUs comprising its defined item of “distillate” is set forth in Table E below.

| <b>Table E – Analysis of Distillate Inventory</b> |      |   |  |  |  |
|---|------|---|--|--|--|
|   | SKUs | Range of Price on Distillate Ending Inventory |  | Range of over 50% of Distillate Ending Inventory |  |
|   |      |   |  |  |  |

| Year         |    | Lowest | Highest | Lowest | Highest |
|--------------|----|--------|---------|--------|---------|
| <u>a</u>     | 24 | 15.00  | 41.68   | 34.18  | 34.73   |
| <u>a</u> + 1 | 25 | 33.26  | 41.72   | 35.19  | 36.03   |

An analysis of the Taxpayer's SKUs comprising its defined item of "gasoline" is set forth in Table F below.

| Table F – Analysis of Gasoline Inventory |      |   |         |  |         |
|--|------|---|---------|--|---------|
| Year                                     | SKUs | Range of Price on Distillate Ending Inventory |         | Range of over 50% of Distillate Ending Inventory |         |
|  |      | Lowest  | Highest | Lowest   | Highest |
| <u>a</u>                                 | 108  | 7.03  | 46.66   | 32.92  | 39.13   |
| <u>a</u> + 1                             | 150  | 27.22   | 94.27   | 36.94  | 40.55   |

## **LAW & ANALYSIS:**

### ***Law:***

*Section 446(a) of the Internal Revenue Code* provides that taxable income shall be computed under the method of accounting on the basis of which the taxpayer regularly computes his income in keeping his books.

*Section 471(a)* provides that whenever in the opinion of the Secretary the use of inventories is necessary in order clearly to determine the income of any taxpayer, inventories shall be taken by such taxpayer on such basis as the Secretary may prescribe as conforming as nearly as may be to the best accounting practice in the trade or business and as most clearly reflecting the income.

*Section 1.472-1(a) of the Income Tax Regulations* provides that any taxpayer permitted or required to take inventories pursuant to the provisions of *section 471*, and pursuant to the provisions of §§ *1.471-1 to 1.471-9*, inclusive, may elect with respect to those goods specified in his application and properly subject to inventory to compute his opening and closing inventories in accordance with the method provided by *section 472*, this section, and § *1.472-2*. Under this last-in, first-out (LIFO) inventory method, the taxpayer is permitted to treat those goods remaining on hand at the close of the taxable year as being: (1) Those included in the opening inventory of the taxable year, in the order of acquisition and to the extent thereof, and (2) Those

acquired during the taxable year. The LIFO inventory method is not dependent upon the character of the business in which the taxpayer is engaged, or upon the identity or want of identity through commingling of any of the goods on hand, and may be adopted by the taxpayer as of the close of any taxable year.

*Section 1.472-2(d)* provides that goods of the specified type on hand as of the close of the taxable year in excess of what were on hand as of the beginning of the taxable year shall be included in the closing inventory, regardless of identification with specific invoices and regardless of specific cost accounting records, at costs determined pursuant to the provisions of subparagraph (1) or (2) of this paragraph, dependent upon the character of the transactions in which the taxpayer is engaged: (1)(i) In the case of a taxpayer engaged in the purchase and sale of merchandise, such as a retail grocer or druggist, or engaged in the initial production of merchandise and its sale without processing, such as a miner selling his ore output without smelting or refining, such costs shall be determined -- (a) By reference to the actual cost of the goods most recently purchased or produced; (b) By reference to the actual cost of the goods purchased or produced during the taxable year in the order of acquisition; (c) By application of an average unit cost equal to the aggregate cost of all of the goods purchased or produced throughout the taxable year divided by the total number of units so purchased or produced, the goods reflected in such inventory increase being considered for the purposes of *section 472* as having been acquired all at the same time; or (d) Pursuant to any other proper method which, in the opinion of the Commissioner, clearly reflects income. (2) In the case of a taxpayer engaged in manufacturing, fabricating, processing, or otherwise producing merchandise, such costs shall be determined: (i) in the case of raw materials purchased or initially produced by the taxpayer, in the manner elected by the taxpayer under subparagraph (1) of this paragraph to the same extent as if the taxpayer were engaged in purchase and sale transactions; and (ii) in the case of goods in process, regardless of the stage to which the manufacture, fabricating, or processing may have advanced, and in the case of finished goods, pursuant to any proper method which, in the opinion of the Commissioner, clearly reflects income.

*Section 1.472-8(a)* provides that any taxpayer may elect to determine the cost of his LIFO inventories under the so-called "dollar-value" LIFO method, provided such method is used consistently and clearly reflects the income of the taxpayer in accordance with the rules of this section. The dollar-value method of valuing LIFO inventories is a method of determining cost by using "base-year" cost expressed in terms of total dollars rather than the quantity and price of specific goods as the unit of measurement. Under such method the goods contained in the inventory are grouped into a pool or pools as described in paragraphs (b) and (c) of this section. The term "base-year cost" is the aggregate of the cost (determined as of the beginning of the taxable year for which the LIFO method is first adopted, i.e., the base date) of all items in a pool. The taxable year for which the LIFO method is first adopted with respect to any item in the pool is the "base year" for that pool, except as provided in paragraph (g)(3) of this section. Liquidations and increments of items contained in the pool shall be reflected only in terms of a net liquidation or increment for the pool as a whole. Fluctuations may occur in quantities of various items within the pool, new items which properly fall within the pool may be added, and old items may disappear from the pool, all without necessarily effecting a change in the dollar value of the pool as a whole. An increment in the LIFO inventory occurs when the end of the year inventory for any pool expressed in terms of base-year cost is in excess of the beginning of

the year inventory for that pool expressed in terms of base-year cost. In determining the inventory value for a pool, the increment, if any, is adjusted for changing unit costs or values by reference to a percentage, relative to base-year-cost, determined for the pool as a whole. See paragraph (e) of this section. See also paragraph (f) of this section for rules relating to the change to the dollar-value LIFO method from another LIFO method.

*Section 1.472-8(b)(3)(i)(a)* provides that a taxpayer may elect to establish multiple pools for inventory items which are not within a natural business unit as to which the taxpayer has adopted the natural business unit method of pooling as provided in subparagraph (1) of this paragraph. Each such pool shall ordinarily consist of a group of inventory items which are substantially similar. In determining whether such similarity exists, consideration shall be given to all the facts and circumstances. The formulation of detailed rules for selection of pools applicable to all taxpayers is not feasible. Important considerations to be taken into account include, for example, whether there is substantial similarity in the types of raw materials used or in the processing operations applied; whether the raw materials used are readily interchangeable; whether there is similarity in the use of the products; whether the groupings are consistently followed for purposes of internal accounting and management; and whether the groupings follow customary business practice in the taxpayer's industry. The selection of pools in each case must also take into consideration such factors as the nature of the inventory items subject to the dollar-value LIFO method and the significance of such items to the taxpayer's business operations. Where similar types of goods are inventoried in natural business units and multiple pools of the taxpayer, the Commissioner may apportion or allocate such goods among the natural business units and the multiple pools, if he determines that such apportionment or allocation is necessary in order to clearly reflect the income of the taxpayer.

*Section 1.472-8(b)(3)(i)(b)* provides that raw materials which are substantially similar shall be pooled together in accordance with the principles of this subparagraph. However, inventories of raw or unprocessed materials of an unlike nature may not be placed into one pool, even though such materials become part of otherwise identical finished products.

*Section 1.472-8(b)(3)(i)(c)* provides that finished goods and goods-in-process in the inventory shall be placed into pools classified by major classes or types of goods. The same class or type of finished goods and goods-in-process shall ordinarily be included in the same pool. Where the material content of a class of finished goods and goods-in-process included in a pool has been changed, for example, to conform with current trends in an industry, a separate pool of finished goods and goods-in-process will not ordinarily be required unless the change in material content results in a substantial change in the finished goods.

*Section 1.472-8(d)* provides that whether the number and the composition of the pools used by the taxpayer is appropriate, as well as the propriety of all computations incidental to the use of such pools, will be determined in connection with the examination of the taxpayer's income tax returns. Adequate records must be maintained to support the base-year unit cost as well as the current-year unit cost for all items priced on the dollar-value LIFO inventory method, regardless of the method authorized by § 1.472-8(e) which is used in computing the LIFO value of the dollar-value pool. The pool or pools selected must be used for the year of adoption and for all subsequent taxable years unless a change is required by the Commissioner in order to clearly reflect income, or unless permission to change is granted by the Commissioner as provided in §



1.446-1(e). However, see § 1.472-8(h) for authorization to change the method of pooling in certain specified cases.

***Analysis:***

The purpose of the LIFO method is to permit a taxpayer to exclude the effects of inflation (i.e., steadily rising cost of replacement goods) from its computation of gross income. But the LIFO method was not designed to compensate for the effects of artificial inflation, which can result from changes in quality and product mix. See, e.g., *Amity Leather Products Co. v. Commissioner*, 82 T.C. 726, 733 (1984). To minimize the effects of artificial inflation under the dollar-value LIFO method, the regulations require taxpayers to assign "items" to one or more dollar-value pools. Neither the Code nor the applicable regulations define "item," but the Amity Court opined that a narrower definition will provide a more accurate measure of inflation (i.e., price index). The Court also opined, however, that the definition of "item" must be administratively feasible and not unduly burdensome from the standpoint of each of the parties (i.e., the taxpayer and Compliance). *Amity Leather supra*, at 734. In other words, the definition of "item" depends on the taxpayer's facts and circumstances.

Based on Taxpayer's facts and circumstances we believe Taxpayer has defined "item" too broadly for both its crude oil and refined products pools to clearly reflect income because their definition compensates them for the effects of artificial inflation resulting from changes in quality and/or product mix.

***Crude Oil and Other Feedstocks Pool***

The physical characteristics of crude oil tend to vary depending on whether the crude oil is heavy or light (i.e., measured by its API specific gravity) and on whether the crude oil is sweet or sour. While lighter gravities of crude oil tend to yield higher proportions of light refined products, such as gasoline and distillates, the range of types of crude oil that could produce a given range of refined product output is relatively broad.

The price of crude oil also tends to vary with its specific gravity. Lighter gravity crude oils tend to be more expensive than heavier gravities of crude oil. However, this price disparity between different gravities of crude oil may be outweighed by a taxpayer's ability to refine any type of crude oil into the desired finished product.

The other major variation in the character and quality of crude oil relates to the sulfur content of the crude oil (i.e., sour crude oil has a relatively high percentage of sulfur, whereas sweet crude oil has a lower concentration of sulfur. Sulfur is an impurity that must be removed from the crude oil in order to make the refined products usable. Refineries vary on the extent they are equipped to remove the sulfur content.

As Table B above illustrates, in year a Taxpayer maintained approximately 65 different SKUs of crude in their ending inventory, with a price range of \$11.40 to \$34.71 per barrel. Six SKUs represented over 40% of the crude barrels in ending inventory for year a, and had a range in price

per barrel between \$22.56 and \$27.82. In year a + 1 Taxpayer maintained 74 SKUs of crude in their feedstock crude ending inventory, with a price range of \$25.00 to \$34.71 per barrel. Four SKUs represented over 40% of the crude barrels in ending inventory for year a + 1, with a range in price per barrel is between \$26.12 and \$30.87. These disparate prices are dependent on specific gravity, sulfur content and place of origin. Transportation costs (freight-in) make it much more costly to acquire crude oil from foreign national companies in the Middle East than it would domestic crude oil with similar density and sulfur content. Moreover, the information in Table C (above) indicates there were marked changes in Taxpayer's crude oil and other feedstocks product mix from year a-3 through year a. As noted above, due to the location of Taxpayer's refineries and their refining capabilities, Taxpayer has to purchase a variety of different types of crude oil from both domestic and foreign sources.

### ***Refined Products Pool***

Taxpayer maintained 12 items in its refined products pool. The vast differences in quality and product mix within these items supports our conclusion Taxpayer's definition of an item is overly broad because changes in quality and product mix could result in artificial inflation being included in Taxpayer's LIFO price indices. An analysis of Taxpayer's "items" of "distillate" and "gasoline" bear this out.

Taxpayer's Distillate Ending inventory for year a was comprised of approximately 24 different distillate SKU's with a range in price of \$15.00 to \$41.68 per barrel. (See Table D above) The two items representing over 50% of the ending inventory had an ending barrel value of 34.18 and 34.73. The year a +1 distillate inventory was comprised of approximately 25 different SKU's with a range in price of \$33.26 to \$41.72. The two items representing over 50% of the ending inventory had an ending barrel value of 35.19 and 36.03. Many of the distillate items that were present in the year a inventory were not present in the year a +1 inventory. Similarly, many year a distillate items were not present in the year a+1 inventory.

Taxpayer's year a gasoline ending inventory was comprised of approximately 108 different SKU's with a range in price of \$7.03 to \$46.66. The six items representing over 50% of the ending inventory had an ending barrel value ranging from 32.92 to 39.13. The year a+1 distillate inventory was comprised of approximately 150 different SKU's with a range in price of \$27.22 to \$94.27. The two SKU's representing over 50% of the ending inventory had an ending barrel value of \$36.94 and \$40.55.

Associate Area Counsel (LMSB)

By: S/Grant E. Gabriel  
Grant E. Gabriel  
Senior Counsel (LMSB)

This writing may contain privileged information. Any unauthorized disclosure of this writing may undermine our ability to protect the privileged information. If disclosure is determined to be necessary, please contact this office for our views.

Please call Grant Gabriel at (313) 237-6424 if you have any further questions regarding this matter.